

County eyes 'Eco-Complex'

Plans at landfill include ASU research facility, steam turbine

By Sarah Newell

Catawba County Commissioners took the first step to develop an eco-complex energy facility near Blackburn Landfill at their Monday meeting.

Commissioners signed a letter of intent to work with Petra Engineering PLLC in Huntersville, to conduct a feasibility study of the eco-complex, and will conduct an engineering design, as well. Catawba County may then enter into a service agreement with Petra, to finance, construct, and manage the other parties that will be connected with the eco-complex.

Over the next few years, the eco-complex is slated to have a sludge manufacturing, a greenhouse, Gregory Wood Products (G&G), research for Appalachian State University, Pallet-One, Inc. and a steam turbine. At the center of all these facilities is the Energy Facility, which will be owned by Catawba County and handled by a management contractor who takes orders from the county.

The first part of the complex is already in place – Blackburn Landfill. Some of the liquid steam from the proposed biosolids processing facility will be injected into the landfill to create more landfill gas methane that will produce more energy. This gas can be captured to minimize greenhouse gas emissions for other projects at the eco-complex. This gas, in turn, is used in the biosolids processing facility, lowering the electrical costs. The waste heat, from the landfill gas engines will also help dry the sludge in the sludge consortium.

G&G Lumber will also work with Catawba County at the eco-complex in using every bit of wood that comes through the facility. Mulch and compost will either be sold to area residents or to the proposed greenhouse facility, and the sawdust and ground wood will be used at the energy facility. The energy from the central facility will operate the wood-drying kilns.

Pallet-One, Inc. is similar to G&G Lumber's capacity at the eco-complex, using discarded pallets from the landfill and recycling them. The energy will operate the wood-drying kilns.

The central energy facility will provide all the energy and essential equipment necessary for processing bio-waste and wood by-products from G&G Lumber, Pallet-One and the landfill, and will be used to operate kilns, dry sludge, provide heat and cooling in the greenhouse and operate the turbine electrical generators, with an efficiency rate of up to 85 percent.

Glasshouse, Inc. has entered into a verbal agreement with the county that it will have between 25 and 100 acres of greenhouses at the eco-complex, including a research laboratory, and will create up to 200 jobs.

Blue Ridge Brick Company has also expressed an interest in joining the eco-complex, and will theoretically operate a pottery incubator and kiln, which will be available for citizen educational programs, developing potters and assisting area potters with their trade. The Blue Ridge Brick Company will receive heat and ash from the energy facility to operate.

There will also be a sludge/wastewater biosolids processing facility at the eco-complex, which will use thermal drying and the reuse of the resulting dried solids in greenhouses, nurseries, gardens, land application and landfill cover material. Bio-energy will be created during its operation, producing methane gas, which will help the methane from the landfill in the production of heat and electricity.

The organics processing facility will use organic residuals, fly ash and thermal-drying technology to provide compost, soils and fertilizer to citizens, greenhouses, landfill applications and others in the eco-complex.

Appalachian State University will allow students to research all aspects of biological-derived energy recovery and the research of hydrogen, nitrogen, carbon dioxide, and ethanol for environmental, agricultural and energy purposes.

Catawba Valley Community College will also be involved in the eco-complex, with an area for turfgrass management education. A golf course or acreage will be on site to develop treated discharge-water, fly ash, treated biosolids and compost from the eco-complex, and incorporate it into turfgrass or golf course management.

The first phase, which is expected to be finished in the third quarter of 2006, would include G&G Lumber kiln one and Pallet-One kiln. The second phase, completed in the first quarter of 2008, would have G&G Lumber's third kiln, a biosolids facility and a turbine electrical generator.

In the 2005-2006 fiscal year budget, \$600,000 was appropriated to get the project off the ground - \$300,000 for solid waste and \$300,000 for water and sewer.